CITY OF CHESAPEAKE
MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) INSPECTION

CHESAPEAKE
DEPARTMENT OF PUBLIC WORKS
929 EXECUTIVE BOULEVARD
CHESAPEAKE, VA 23328

FINAL REPORT
MARCH 2011

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U.S. Environmental Protection Agency
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EXECUTIVE SUMMARY

Municipal Separate Storm Sewer System (MS4)
Inspection Report
Chesapeake, Virginia

From June 16 through June 17, 2010, a compliance inspection team comprised of staff from the U.S. Environmental Protection Agency (EPA) Region 3, Virginia Department of Conservation and Recreation (DCR), EPA's contractor, Eastern Research Group, Inc. (ERG), and ERG's subcontractor, PG Environmental, LLC, inspected the city of Chesapeake, Virginia municipal separate storm sewer system (MS4) program. Discharges from the city's MS4 are regulated by Virginia Pollution Discharge Elimination System (VPDES) Permit Number VA0088625, effective March 8, 2001. The purpose of this inspection was to obtain information for evaluating the city's compliance with Permit VA0088625 requirements, which are included in Attachment 1. The inspection focused specifically on the following sections of the Permit in relation to the city's MS4 program: (1) Part I.A.1.a - Structural and Source Control Measures; (2) Part I.A.1.b - Unauthorized Discharges and Improper Disposal; (3) Part I.A.1.c - Runoff from Industrial and Commercial Facilities; and (4) Part I.A.1.d - Runoff from Construction Sites.

Based on the information obtained and reviewed, the EPA inspection team made several observations concerning the city of Chesapeake's MS4 program related to the specific permit requirements evaluated. Table 1 summarizes the permit requirements and the observations noted by the inspection team.

Table 1. Observations Identified During the Chesapeake Inspection (6/16/10 – 6/17/10)

Virginia Permit Number VA0088625 Requirement	Observations	
I.A.1.a – Structural and Source Control Measures	Observation 1.	The city of Chesapeake is not tracking and inspecting private stormwater management facilities as required by the city's Municipal Separate Storm Sewer System Program Plan (MS4 Program Plan).
I.A.1.b – Unauthorized Discharges and Improper Disposal	Observation 2.	The city of Chesapeake is not prioritizing industrial and commercial areas for dry weather screening inspections.
	Observation 3.	The city of Chesapeake is not taking samples and conducting field tests when standing water was observed in a storm sewer inlet.
I.A.1.c – Runoff from Industrial and Commercial Facilities	Observation 4.	The city of Chesapeake is not conducting regular industrial inspections at facilities with the potential to contribute substantial pollutant loadings.
	Observation 5.	The city of Chesapeake is not prohibiting non-stormwater discharges from the MS4 originating from the city municipal yards.

Table 1. Observations Identified During the Chesapeake Inspection (6/16/10 – 6/17/10)

Virginia Permit Number VA0088625 Requirement	Observations	
I.A.1.d – Runoff from Construction Sites	Observation 6.	The erosion and sediment control (E&S) inspections conducted by the city of Chesapeake are not addressing non-sediment, construction site pollutant sources.
	Observation 7.	The city of Chesapeake is not enforcing proper construction erosion and sediment controls at the Culpepper Landing Development Construction Site.
	Observation 8.	The city of Chesapeake does not have a training program to educate construction site operators.
	Observation 9.	The city of Chesapeake's Standard Operating Procedure (SOP) "Erosion and Sediment Control Minimum Standards, Inspection and Enforcement" does not reflect current operating procedures.
	Observation 10.	The inspectors of the city of Chesapeake are not completing the documentation required by SOP "Erosion and Sediment Control Minimum Standards, Inspection and Enforcement".

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I. INTRODUCTION

From June 16 through June 17, 2010, a compliance inspection team comprising staff from the U.S. Environmental Protection Agency (EPA) Region 3, Virginia Department of Conservation and Recreation (DCR), EPA's contractor, Eastern Research Group, Inc. (ERG), and ERG's subcontractor, PG Environmental, LLC, (hereafter, collectively, EPA inspection team) inspected the city of Chesapeake, Virginia (hereafter, the city, Chesapeake or the city of Chesapeake) municipal separate storm sewer system (MS4) program. Discharges from the city's MS4 are regulated by Virginia Pollution Discharge Elimination System (VPDES) Permit Number VA0088625, effective March 8, 2001. The purpose of this inspection was to evaluate compliance with the city's Permit VA0088625 requirements, which are included in Attachment 1. The inspection focused specifically on the following sections of the Permit in relation to the city's MS4 program: (1) Part I.A.1.a - Structural and Source Control Measures; (2) Part I.A.1.b - Unauthorized Discharges and Improper Disposal; (3) Part I.A.1.c - Runoff from Industrial and Commercial Facilities; and (4) Part I.A.1.d - Runoff from Construction Sites. The following personnel participated in this inspection:

Chesapeake Department of Public Works[1]:	Mr. Eric Martin, Public Works Director Mr. Richard Broad, Stormwater Administrator Mr. RC Kemner, Conservator of the Peace Ms. Casey Magruder, Environmental Engineering Specialist Mr. Sam Sawan, Senior Stormwater Engineer Mr. Roger Trafry, Construction Inspector, II Mr. Randy Ussery, Engineering Technician
Chesapeake Department of Development and Permits:	Mr. Thomas D. Crawford, Development Construction Administrator Mr. Dave Dombroski, Permit Engineer Mr. Ron Hepler, Construction Inspector Mr. Hal Shiflet, Construction Inspector
Chesapeake Fire Department:	Ms. Barbara Brumbaugh, Environmental Quality Manager Mr. Don Fowler, Deputy Fire Marshal
EPA Representatives:	Mr. Chuck Schadel, EPA Region 3, Enforcement Officer Ms. Liz Ottinger, EPA Region 3
Virginia DCR Representative:	Mr. Doug Fritz, MS4 Program Manager
EPA Contractors:	Mr. Mark Briggs, ERG Ms. Kavya Kasturi, ERG Mr. Max Kuker, PG Environmental, LLC

Section II of this report presents background information on Chesapeake's MS4 program. Section III presents information obtained during the inspection related to the specific permit requirements evaluated.

[1] A copy of sign-in sheets containing the names of all city participants in the inspection is included as Attachment 2.

II. CHESAPEAKE BACKGROUND

The city of Chesapeake is located in eastern Virginia. It is bordered on the north by the Cities of Norfolk and Portsmouth, on the east by the city of Virginia Beach, on the west by the city of Suffolk, and on the south by the State of North Carolina. According to the U.S. Census Bureau, as of 2010, the city's population was estimated at 222,209 and the city has a total area of approximately 340 square miles.

Chesapeake's MS4 program is administered by the following departments:

- Department of Public Works;
- Department of Development and Permits;
- Fire Department;
- Department of Planning;
- Department of Neighborhood Services;
- Department of Public Utilities;
- Department of Parks and Recreation; and
- Department of General Services.

III. INFORMATION OBTAINED DURING THE INSPECTION REGARDING PERMIT REQUIREMENTS

The EPA inspection team obtained information to evaluate the city of Chesapeake's compliance with the requirements of the Permit (included in Attachment 1) under which the city's MS4 system is covered. The Permit has an effective date of 8 March 2001 and an expiration date of 10 April 2006. The permit has been administratively extended to the present. The EPA inspection team evaluated four permit components; observations regarding the city's implementation of each permit component are presented in the following four subsections. Attachment 3, the Exhibit Log, contains all referenced exhibits, and Attachment 4, the Photograph Log, contains all referenced photographs (additional photographs are available in the inspection record).

III.A. Requirement I.A – Stormwater Management Program

Part I.A of the permit contains requirements for the city to develop, implement and refine a Stormwater Management Program (SWMP) including pollution prevention measures, management or removal techniques, use of legal authority, and other appropriate means to control the quality and quantity of stormwater discharged from the MS4. The staff responsible for the city's SWMP includes representatives from numerous organizational divisions as described in Section II of this report. The city implements its SWMP through its MS4 Program Plan. The EPA inspection team's observations related to this section of the permit are discussed below.

III.B. Requirement I.A.1.a – Structural and Source Control Measures

Part I.A.1.a of the permit contains requirements for the city to utilize structural and source control measures to reduce pollutants in stormwater runoff from commercial and residential areas, which the city addresses through a program herein referred to as its Structural and Source Control Measures Program. Within this program area, the inspection was focused on Parts I.A.1.a(1), (2), and (4) of the permit. State laws such as the Virginia Stormwater Management Law (§ 10-603 et seq. of the Virginia Code), the Virginia Stormwater Management Regulations (4VAC3-20 et seq.), and the Chesapeake Bay Preservation Act (§ 10.1-2100 et seq. of the Virginia Code) provide the underlying regulatory framework for the city's Structural and Source Control Measures Program.

The city has promulgated the following ordinances pertaining to development and redevelopment:

- Chapter 19 – Business Regulations:
  - Section 600 et seq.: Chesapeake Landscaping Ordinance.

- Chapter 26 – Environment (Primary Requirements):
  - Article II: Environmental Improvement Council;
  - Article III: Erosion and Sediment Control;
  - Article VIII: Stormwater Management; and
  - Article X: Chesapeake Bay Preservation Area District.

- Chapter 66 – Streets and Sidewalks.

- Chapter 70 – Subdivisions.

The city has also developed a *Public Facilities Manual* (PFM). The manual covers topics such as site plan submission, design criteria for stormwater management (SWM) facilities, drainage, and stormwater quantity and quality requirements.

Part I.A.1.a of the Permit addresses requirements for the structural and source controls program. Within this program area, the inspection was focused on site plan review, maintenance inspections, and enforcement. The city's SWMP for structural and source control measures is primarily implemented by the Department of Development and Permits and the Department of Public Works' Stormwater Management Division (Stormwater Management); the inspection team's observations related to this section of the permit are discussed below.

III.B.1. Site Plan Review

Part I.A.1.a.(2) of the permit states that the city must "adhere to…all those components of the Comprehensive Plan, the Storm Water Management Master Plan, and all storm water related ordinances pertaining to development and redevelopment in the City of Chesapeake."

The administrative plan process includes the review of land development applications by various city of Chesapeake staff. This review does not require a public hearing. The types of applications that can be approved administratively include the preliminary site plan application, preliminary subdivision plan application, Chesapeake Bay Preservation Area (CBPA) encroachments (other than CBPA exceptions or appeals), Agricultural Divisions, and Resubdivisions.

A preliminary site plan is required for new construction and additions located on land zoned commercial, office and institutional, industrial, and multi-family residential. This review is intended to ensure that the site plan conforms to all city code development ordinances and standards including erosion and sediment (E&S) control and structural control measures. On September 25, 2002, the Planning Commission delegated preliminary site plan review responsibilities to the Planning Department. A preliminary plan is required for multi-family residential, large retail establishments (cumulative gross square footage exceeds 50,000 square feet), and for properties located within the Transportation Corridor Overlay District that have been rezoned since June 13, 2001. All other site plans do not require preliminary review and final construction plans may be submitted directly to the Department of Public Works.

A preliminary subdivision plan is required when a parcel of land is subdivided into more than five lots, or when a new street or public utility extension must be constructed to serve a newly subdivided parcel. This review is intended to ensure that the subdivision meets all design criteria established by the city of Chesapeake's Subdivision Ordinance.

A final Site Plan is required to be submitted to the city's Department of Public Works for any construction, use, change in use, or other development in all zoning districts, including fixed public facilities. Public Works distributes the plans to applicable city departments for review for conformity with the approved preliminary plan (if applicable), and with all other applicable provisions of the relevant ordinances, regulations, and policies applicable to the site. A SWM facility maintenance agreement must be signed prior to plan approval.

The Development Engineering Section of the Development and Permits Department is responsible for review of E&S controls and SWM facilities on site plans. If the final site plan meets all relevant requirements, Public Works will issue an approval letter. If any department finds the plans deficient, Public Works will prepare a review letter detailing aspects of the plan that require revision prior to approval. Once final site plan approval is obtained, the applicant must post a permit bond and obtain all permits consistent with the plan approval. This may include Land Disturbing and Stormwater Permits.

Based on an office discussion with city staff members and limited records review, no inconsistencies between the city's Structural and Source Control Measures Program for Site Plan Review and the permit were identified.

III.B.2. Structural Controls Maintenance Inspections

Public Controls

The city has approximately 350 public SWM facilities. City representatives stated that the public SWM facility inspection program was initiated in the early 1990s. The city's goal is to inspect the public facilities at a minimum of one time per year on a rotating basis. The city tracks the SWM facilities in a Microsoft Excel spreadsheet and is working on getting the structures into a web-based system which is expected to be completed by the time the city receives their renewed permit.

Representatives from Stormwater Management attend the final construction inspection for public projects to ensure that the SWM facilities are adequately installed and are clean prior to acceptance of the structure by the city. Stormwater Management also receives as-built drawings of the structures for reference during future inspections.

Staff from Stormwater Management utilize a checklist to document the condition of SWM facilities during annual inspections. Information from the checklists is input into the tracking spreadsheet for future reference. If deficiencies are noted during an inspection, staff from Stormwater Management prepare work orders for public works staff to correct the deficiency (i.e., cleaning and repair) and work with public works through completion of the corrective action.

Private Controls

City representatives stated that the city has approximately 656 private SWM facilities and 34 SWM facilities under the control of the school system. School system facilities are treated as a private entity and are subject to a stormwater utility fee. City representatives explained that the total number of private SWM facilities may include a number of old maintenance agreements for non SWM facilities such as right-of-ways.

The city of Chesapeake requires that owners of private SWM facilities sign agreements and accept responsibility for maintaining their SWM facility. The SWM facility maintenance agreement is a Memorandum of Agreement (MOA) between the city's Department of Engineering and the SWM facility owner. The MOA requires the owner to perform routine maintenance and maintain documentation of maintenance. The MOA is recorded with the property deed to ensure that maintenance obligations are legally binding in perpetuity or upon transfer of ownership.

The city's Stormwater Management Division is responsible for maintaining the agreement on file and enforcing the agreement. City representatives stated that the private SWM facility inspection program was initiated in 2007 and that an MOA with the public school system became effective in 2005. The city's goal is to inspect the private facilities once every five years, on a rotating basis.

Staff from Stormwater Management use a checklist to document the condition of private SWM facilities during inspections, which is slightly different than the checklist used for public SWM facilities. City representatives explained that all information is kept in hard copy files and that the information collected during the inspections is not input into a tracking spreadsheet or other type of tracking device for future reference (i.e., for tracking consistency with the inspection schedule, evaluation of frequency based upon compliance issues, etc.). However, if deficiencies are noted during an inspection, staff from Stormwater Management follow a process which is intended to ensure that the deficiencies are corrected.

According to city representatives, the city has established the following procedures for follow-up of private facilities:

1. Verbal discussion with SWM facility owner
2. Formal letter from the city citing agreement requirements and deficiencies
3. Formal letter from the City Attorney

The city's Stormwater Ordinance, Chapter 27, Article 8, was updated in 2008 to provide the city with the authority to conduct repairs on private SWM facilities in the event that the owner was not responsive to required corrective actions. Prior to 2008, the authority had only been granted under the MOA.

III.B.3. Structural Controls Site Visits

On June 17, 2010, the EPA inspection team conducted three SWM facility site visits; details of the site visits are provided below. All referenced photographs are contained in Attachment 4, Photograph Log.

Site: 7-Eleven (120 George Washington Parkway, Chesapeake, VA)

7-Eleven owns and operates a convenience store and vehicle fueling station which is located across a four lane roadway and approximately 150 feet from the Great Dismal Swamp Canal. The entire property consists of approximately 3.25 acres, of which approximately two-thirds appeared impervious on the site plan. The site consists of a parking lot with a fueling station, one building, a Filterra® stormwater treatment unit (Photographs 1 and 2), a grassy swale (Photograph 3), and a dry stormwater management pond (Photographs 4 and 5). The stormwater management pond appeared to serve more of a water quantity control function rather than water quality control as low volume stormwater flow was not detained in the pond. The pond was equipped with a small concrete low flow channel running through the center of the pond (Photograph 5) to the pond's overflow structure. The overflow structure did not appear to detain low volume flows as a small flow was noted entering the pond and exiting the pond through a low flow discharge port on the overflow structure, resulting in a negligible amount of detention time. The pond outlet structure and grassy swale appeared to discharge to a private drainage easement ditch along the western property border (Photograph 6); however, design drawings of the structures were not provided to the EPA inspection team by the city. The site visit was impromptu and therefore no inspection records or site plans were available for review during the site visit.

The City SWM Facility Maintenance Inspector and the EPA inspection team inspected the stormwater pond inlet, the grassy swale, the Filterra® system, and the drainage easement. During the site visit, the EPA inspection observed that a small amount of flow containing a sheen was entering and exiting the pond with minimal detention time (Photograph 7).

The EPA inspection team requested a copy of the site plan review documents, the maintenance agreement and previous inspection reports. The city provided site plan review documents, a maintenance agreement, and inspection reports for an inspection which occurred subsequent to the EPA inspection on June 17, 2010. The Structural Control Maintenance MOA was signed, dated and notarized on September 6, 2007 as part of the site plan.

Site: Elmwood Landing Subdivision (Mishannock Way, Chesapeake, VA)

The Elmwood Landing Subdivision is a residential neighborhood with a public stormwater lake surrounded by homes (Photographs 8 and 9). City representatives explained that the lake is considered to be public, because the lake receives stormwater from public roadways. The city maintains an access easement in the southern corner of the lake along the eastern border of the property at 434 Mishannock Way.

Upon arrival at the site, the City SWM Facility Maintenance Inspector indicated that he had conducted the last several annual inspections and described the process used during those inspections. The City SWM Facility Maintenance Inspector and the EPA inspection team did not conduct a comprehensive review of the lake's perimeter due to access restrictions, but discussed the drainage patterns of the lake. No physical issues were noted; however, during the GIS review portion of the EPA inspection it was noted that the drainage patterns discussed at the site were incorrect. Therefore it did not appear that the City SWM Facility Maintenance Inspector had a clear understanding of the design of the lake.

According to documentation provided by the city, the city conducted annual inspections of the pond. The last inspections were conducted on October 15, 2007, November 20, 2008, and October 4, 2009. Documentation of the inspections provided by the city to the EPA inspection team indicated that the pond was in compliance with city standards at those times.

Site: Ashdon Commerce Center (315, 317, and 319 Great Bridge Boulevard, Chesapeake, VA)

The Ashdon Commerce Center (Photograph 10) consists of a small commercial development surrounding a small wet stormwater pond (approximately .29 acres) to accommodate drainage from the development (Photograph 11). The commerce center contained approximately 5 buildings and impervious parking areas surrounding the pond.

The City SWM Facility Maintenance Inspector indicated that he had conducted the most recent inspection of the development and described the process used during that inspection. The City SWM Facility Maintenance Inspector and the EPA inspection team conducted a comprehensive review of the lake's perimeter. Overall, the pond appeared to be in good operational condition; however, one small side slope failure was noted by the city's inspector (Photograph 12).

According to documentation provided by the city, the city conducted an inspection of the pond on March 27, 2008, and indicated that the pond was in compliance with city standards and that the water quality was "Pristine."

The EPA inspection team requested a copy of the maintenance agreement and previous inspection report. The city provided a maintenance agreement and an inspection report for an inspection which occurred on March 17, 2008. The Structural Control Maintenance MOA was signed, dated and notarized on June 16, 2003.

Observation 1. The city of Chesapeake is not tracking and inspecting private SWM facilities as required by the city's MS4 Program Plan.

Permit Part I.A.1.a requires the city of Chesapeake to "utilize structural and source control measures to reduce pollutants that are discharged through the municipal separate storm sewer system in storm water runoff from commercial and residential areas, including a schedule for implementing the controls." Part I.A.1.a.(2) further requires the city to "adhere to and, where applicable, enforce all those components of the Comprehensive Plan, the Storm Water Management Master Plan, and all storm water related ordinances pertaining to development and redevelopment in the city of Chesapeake."

Section 7.3 (Maintenance Inspection and Compliance) of the MS4 Program Plan requires the city to develop a program to randomly inspect private SWM facilities to ensure that necessary maintenance is performed in order to better protect water quality. In addition, Departmental Regulation 751 (Private Stormwater Facility Inspection), dated May17, 2006, requires that the city inspect all private SWM facilities with recorded maintenance agreements at least once every five years.

At the time of the inspection, city staff explained that they had not yet identified all private SWM facilities and had not yet developed a mechanism to track the inspections of the SWM facilities. City representatives stated that a review of each of the approximate 656 SWM facilities had not been completed to identify which and how many of the SWM facilities are actually related to stormwater as the list may include a number of old maintenance agreements for non-SWM facilities (i.e., right-of-ways). It was implied that the total number of facilities was derived from a count of hard copy files. A complete listing of the 656 SWM facilities had not been compiled in tabular form and the inspections completed to date were not tracked to ensure that the city is inspecting each of the SWM facilities once every five years. Since records of inspections are not maintained in an organized manner, it was unclear how many inspections were completed and how frequently inspections are being conducted. As stated previously, the private SWM facility inspection program was initiated in 2007 and the city feels that its tracking of private SWM facilities has significantly improved since the inception of the program.

III.C. Requirement I.A.1.b – Unauthorized Discharges and Improper Disposal

Part I.A.1.b of the permit contains requirements for unauthorized non-stormwater discharges and improper disposal, which the city addresses through a program herein referred to as its Dry Weather Screening Program. The city's Dry Weather Screening Program and the applicable permit requirements are discussed below.

III.C.1. Dry Weather Screening Program

The city currently has seven staff members available to perform dry weather screening inspections. Other responsibilities spread amongst the inspectors include erosion and sediment control inspections, complaints response, impervious area verifications, wetlands management, and best management practice inspections.

The Stormwater Management Division's Environmental Engineering Specialist serves as the City Dry Weather Screening Supervisor. She indicated that the city has approximately 1,000 manholes. As specified in the MS4 Program Plan, the city purposes to inspect 25 manholes a year. Approximately 20 to 25% of all of the manholes have been inspected in the last ten years. The city does not conduct dry weather screening at outfalls. The supervisor indicated that water is typically present in the manholes throughout the city of Chesapeake due to groundwater infiltration and field sampling is not conducted each time water is observed in manholes. Therefore the city primarily conducts dry weather screening to identify maintenance issues with the manholes and to meet the permit requirement.

The city has considered targeting industrial and commercial areas for dry weather screening inspections; however, during routine surveillance for illicit discharges by both the City Dry Weather Screening Inspectors and other Public Works Department employees, the city has discovered many issues in residential areas.

Observation 2. The city of Chesapeake is not prioritizing industrial and commercial areas for dry weather screening inspections.

Part I.A.1.b.2 of the permit requires that priority for field screening procedures "shall be placed on segments of the storm sewer system which receive drainage from industrial and commercial sources". However, city staff indicated that dry weather screening sites conducted in residential, industrial and commercial areas, are selected randomly.

III.C.2. Dry Weather Screening Inspections

The city requires at least 72 hours without rainfall prior to conducting dry weather screening. The dry weather screening staff spread the 25 required dry weather screening inspections over the year. The City Dry Weather Screening Supervisor indicated dry weather screening staff are rotated so different personnel perform inspections each year. The City Dry Weather Screening Inspector identifies an area to inspect by choosing an area that has not previously been inspected. Inspections are conducted according to the city's *General Guidelines for Dry Weather Field Screening Program* which includes detailed guidelines on the necessary equipment, as well as procedures for conducting the inspection, performing field tests, and completing documentation. The supervisor indicated that inspectors typically do not take maps on dry weather screening inspections and stated the current inspector has 15 years of experience in stormwater or related areas for the city of Chesapeake.

After arriving at the screening location, the City Dry Weather Screening Inspector identifies whether any manhole lids are missing or cracked as well as if any structures are cracked or caved in. Additionally, the inspector determines whether the manhole needs to be cleaned by identifying whether flow would be blocked or if sediment has accumulated to 10% of the height of the manhole. The inspector completes all the required information on the inspection report including the type of basin, pipe size, and materials of construction. The inspector looks in the manhole to identify the color of the water and any scum or sheen present. The inspector may use a flashlight if necessary but he does not take a sample and view it outside of the manhole. If any odor is present, the inspector would ask the Department of Public Utilities to take a sample. The inspector also takes a photograph and draws a diagram of the manhole. If other manholes are located nearby (e.g., at another corner of the same intersection), the inspector will inspect the other manholes as well. The inspector will note observations on all such manholes on the original inspection sheet and the group of manholes inspections will be counted as one inspection toward the MS4 Program Plan requirement.

Due to the shallow water table in the Chesapeake area, water is typically present in the manholes. Since water is typically present, the city inspectors do not to take samples or conduct field tests. As a result, the city no longer maintains a field testing kit and the associated chemicals. The City Dry Weather Screening Supervisor indicated that the kit was not used and replacing expired chemicals with new chemicals had become an unjustified cost.

Observation 3. The city of Chesapeake is not taking samples and conducting field tests when standing water is observed in a storm sewer inlet.

The City Dry Weather Screening Supervisor indicated that it is typical for standing water to be present in manholes due to the shallow water table and therefore samples are not taken by inspectors unless flow is visible. Since illicit discharges may be small in comparison to the volume of standing water present, flow

may be difficult to detect. By not performing field testing, the city is not fulfilling its permit obligation to "detect… unauthorized non-storm water discharges and/or improper disposal into the municipal separate storm sewer system".

III.C.3. Dry Weather Screening Tracking and Follow Up

The City Dry Weather Screening Supervisor stores completed dry weather screening inspection reports in a binder. The City Dry Weather Screening Inspector will review the reports to determine which areas have been inspected already. A mapping system (e.g., GIS) is not used to track inspections. Additionally, manholes are not assigned numeric IDs, but are instead identified by the nearest street address or intersection.

If the City Dry Weather Screening Inspector identifies a maintenance issue at the inspection site, the Department of Public Works' Operations Division will be notified. The maintenance issues are tracked by Operations in a work order system entitled "Maximo". The City Dry Weather Screening Supervisor does not follow up with Operations to confirm that the maintenance issue has been resolved; however, she stated that work orders in the Maximo tracking system are closely monitored by city supervisors.

If potential illicit discharges are identified, the issue will be entered into the Customer Service Requests (CSR) database, which is also used to track citizen complaints and spills. All stormwater-related issues are assigned to the City Dry Weather Screening Supervisor to resolve. Since the CSR database is city-wide and is used for tracking a variety of issues, the City Dry Weather Screening Supervisor also maintains a personal database with key information to ensure problems are resolved. The supervisor and her staff will coordinate with the Fire Department as needed to resolve issues. While no illicit discharges have been detected through dry weather screening during the supervisor's tenure, the supervisor estimated that she communicates with the Fire Department approximately once a month regarding stormwater issues. For issues taking multiple days to resolve, the supervisor will continue to update the CSR database with any relevant information until the issue is resolved and closed in the database. Additionally, the supervisor keeps hard copy files of each closed issue.

III.D. Requirement I.A.1.c – Runoff from Industrial and Commercial Facilities

Part I.A.1.c of the permit contains requirements to monitor and control pollutants in stormwater discharges from certain industrial and commercial facilities, which the city addresses through a program herein referred to as its Industrial Inspection Program. The city's Industrial Inspection Program and applicable permit requirements are discussed below.

III.D.1. Industrial Inspection Program

The City Department of Public Works relies on the Fire Department to conduct industrial and commercial facility stormwater inspections. The Stormwater Management Division's Environmental Engineering Specialist maintains regular communication with the Deputy Fire Marshal as well as the Fire Department's Environmental Quality Manager to ensure any stormwater related issues resulting from industrial inspections are resolved. While Stormwater Management's Environmental Engineering Specialist does not attend all of the Fire Department's inspections, she estimates she spends approximately 20% of her time with the Fire Department or City Dry Weather Screening Inspectors responding to stormwater issues in the field.

The Fire Department's authority to conduct inspections is derived from the 2006 International Fire Code and the 2006 Virginia Statewide Fire Prevention Code (SFPC). The SFPC does not specifically address stormwater. The Fire Department primarily records stormwater issues under Chapter 27, Hazardous Materials. Fire Department inspectors may also use the industry-specific sections of the SFPC where applicable. For example, during the EPA inspection team's visit to the Waste Management facility, the

Deputy Fire Marshal identified issues in the facility's vehicle repair garage and used SFPC Chapter 22, Repair Garages, to record the issues. See Section III.D.1 of this report for additional details regarding this specific site visit.

The Fire Department has eleven (11) inspectors who are responsible for the inspection of Chesapeake's industrial and commercial facilities. There are over 7,000 industrial and commercial facilities subject to fire code compliance. Seven (7) of the eleven inspectors are Fire Law Enforcement Officials who are authorized to enforce any city code. Fire Department inspections are prioritized by life safety. It is the goal of the Fire Department to inspect each facility every 1.5 to 1.75 years. Approximately 200 to 300 are industrial facilities and 125 facilities file Tier 2 reports as required by the Emergency Planning and Community Right-To-Know Act. Fire Department representatives present during the inspection stated that none of those facilities are known to be contributing substantial loadings to the MS4. The Fire Department representatives indicated that if a discharge is identified during an inspection, the Virginia Department of Environmental Quality (VADEQ) and the city's Department of Public Works will be contacted. Fire Department inspectors also examine materials storage, battery storage, flammables, grease traps, and open containers.

III.D.2. Industrial Facility Site Visits

On June 16 and 17, 2010, the EPA inspection team witnessed a series of industrial facility inspections performed by the City Deputy Fire Marshal. Summary observations pertaining to the sites are presented below.

Site: Southeastern Public Service Authority (SPSA) Recycling Facility – 921 Professional Place, Chesapeake, VA

The SPSA Recycling Facility at one time provided curbside recycling services to the city of Chesapeake. However, at the time of the EPA inspection team's visit, the curbside recycling program had been taken over by a private contractor and the SPSA Recycling Facility was in the process of permanently shutting down. The last inspection at the site was in October 1998. The Deputy Fire Marshal proceeded to conduct an inspection of the indoor office area, warehouse/garage, and the outdoor parking and storage area. During the inspection, the Deputy Fire Marshal noted the following issues:

- Heavy oil build up was present in the truck parking area (Photograph 13) in the vicinity of storm sewer inlets. The Deputy Fire Marshal stated during the site visit and recorded in the inspection report that an action plan for mitigation of the oil spills is required (Exhibit 1, SPSA Inspection Report). The facility was instructed to submit the action plan to the Fire Marshal's office.
- Storm sewer inlet protection was compromised throughout the parking area (Photographs 14 and 15). In addition, a buildup of muddy material and trash were located near one of the inlets and vegetation had grown over silt fence placed around the inlets. The Deputy Fire Marshal further noted that the absorbent socks placed around the inlets were full and in need of replacement.

Site: Baldwin Auto Disposal – 404 Freeman Avenue, Chesapeake, VA

Baldwin Auto Disposal primarily receives and stores disabled vehicles and vehicle parts. The site consists of an office trailer, a small indoor area primarily used for storage, and an outdoor yard. The yard is sectioned into storage areas for various car parts and fluids and also includes a car crusher, weigh scales, and a fluid draining area. The facility drains to a stormwater ditch. The last inspection at the facility was conducted in February 2008. The Deputy Fire Marshal began the inspection by asking for permits and reviewing the Hazardous Material Plan, then proceeded to inspect the entire yard and indoor areas. The Deputy Fire Marshal concluded the inspection by reviewing the site's *General VPDES Permit for Discharges of Storm Water Associated with Industrial Activity* (9VAC25-151, Registration No.

VAR051676) and Stormwater Pollution Prevention Plan (SWPPP). The inspection report is provided as Exhibit 2. During the inspection, the Deputy Fire Marshal and the City Environmental Quality Manager noted the following issues:

- A brown and white spill was present near the perimeter of the site (Photograph 16). The location of the spill was in close proximity to the storm drainage ditch. The Deputy Fire Marshal instructed the facility staff to clean up the spill and to walk the entire ditch to determine if any spills had reached the ditch.
- A wide drainage ditch present on site was filled with muddy water (Photograph 17). Hay bales were placed in the ditch to collect oil. The bottom halves of the hay bales were coated in mud. The ditch drained off site. The Fire Department representative inquired about the site's SWPPP and stated that the SWM facility should be monitored closely.
- Multiple, large water puddles were present on site (Photographs 18 though 21). Large debris, vehicles, and appliances were located in one such puddle (Photographs 19 and 20). An oily sheen (Photograph 21) was present on the puddle which was situated near a large pile of fuel tanks (Photograph 22). The Deputy Fire Marshal stated that he would alert VADEQ to the oil sheen on the puddle.
- Oil spill drying material on site had not been cleaned up (Photographs 23 through 25). Facility personnel indicated that the material is spread around as a preventative measure in case a spill occurs, not to absorb a spill after it occurs. Additionally, facility staff indicated that no oil-water separator was present on site.
- Secondary containment around a large, single-walled waste oil tank had failed (Photographs 26 and 27). The City Environmental Quality Manager instructed the facility personnel to restore the secondary containment.
- A pit was located underneath the weigh scale (Photograph 28). Facility staff stated that the pit was pumped out onto the yard. The Deputy Fire Marshal instructed the staff to pump out the pit into a tank and recycle it for the time being. Additionally, the Deputy Fire Marshal stated that the facility should either take samples of the water in the pit prior to discharge or fill in and close the pit.
- Car batteries were left outside and uncovered near the facility office (Photograph 29).

Additionally, the EPA inspection team noted the following issues:

- An open dumpster containing trash was present on site (Photograph 30).
- Mud and sediment had been tracked through the entrance on to the road (Photograph 31).

Site: Waste Management of Hampton Roads – 3016 Yadkin Road, Chesapeake, VA

Waste Management handles trash collection and disposal in the city of Chesapeake. The EPA inspection team visited the facility where trash collection is managed and vehicles and equipment are serviced and maintained. The facility includes office buildings, a fueling station, a painting facility, a dumpster storage area, a vehicle maintenance garage, and a truck parking area. The outside area drains to a storm ditch. The Deputy Fire Marshal began the inspection in the office buildings, proceeded to the fueling station, paint facility, and storage area, and then visited the garage and parking area. At the end of the inspection, the Deputy Fire Marshal reviewed the permits and stormwater management documents for the facility. The inspection report is provided as Exhibit 3. During the inspection, the City Deputy Fire Marshal and the City Environmental Quality Manager noted the following issues:

- The secondary containment for four above ground storage tanks was full of dirty water (Photograph 32). Facility personnel indicated that the tanks were empty. The Deputy Fire Marshal stated that the tanks should be removed.
- Heavy oil staining was present in the truck parking area (Photograph 33).

Additionally, the EPA inspection team noted the following issues:

- Paint from inside the paint facility had seeped under the building walls and had reached the outside (Photographs 34 through 36).
- Oil staining was present around a waste oil tank in the vehicle maintenance garage. Oil appeared to be seeping underneath the walls potentially reaching the outside (Photograph 37).
- A large plastic container containing "Industrial Deodorant Concentrate" was located on a grassed area with no secondary containment (Photograph 38). Vegetation near the container's spout was dead.
- A plastic drum containing a blue liquid was actively spilling onto a paved area outside (Photograph 39). The liquid had flowed over pavement in multiple directions towards a grassed area and the parking area (Photograph 40). There was no evidence that an effort to stop and/or contain the spilled material was underway.

The EPA inspection team requested the inspection report from the last inspection conducted at the facility; however, the city provided instead documentation of the resolution of an oil spill at the facility in December 2005.

Observation 4. The city of Chesapeake is not conducting regular industrial inspections at facilities with the potential to contribute substantial pollutant loadings.

The City Fire Department Inspectors conduct stormwater inspections in conjunction with their regular fire inspections. The Fire Department has a prioritization scheme for its inspections based on the potential fire hazard; stormwater issues are not used as a basis for the prioritization process. The EPA inspection team accompanied the City Deputy Fire Marshal during his inspection of Baldwin Auto Disposal. The Deputy Fire Marshal identified numerous stormwater issues on site including exposed batteries, oily sheen on stormwater present on site, oil spills, oil drying material that had not been cleaned up, and breaches in existing secondary containment. Despite the numerous issues noted, the site had not been inspected since 2008. Additionally, stormwater issues were noted at the SPSA Recycling Facility which had not been inspected since 1998 and the Waste Management of Hampton Roads Facility was last visited in 2005. Since the city relies on the Fire Department to conduct stormwater inspections and inspections are not conducted on a regular basis, the city is failing to "monitor and control pollutants in storm water discharges from… facilities… contributing substantial pollutant loadings" as required by Part I.A.1.c of the permit.

The Fire Department's 11 inspectors are responsible for inspecting over 7,000 facilities. The thorough inspections necessary to identify stormwater issues in addition to SFPC violations can be time-consuming. During the EPA inspection, the inspection of SPSA Recycling Facility took 50 minutes, Baldwin Auto Disposal's inspection took 1 hour and 10 minutes, and Waste Management of Hampton Roads' inspection took 2 hours. The Deputy Fire Marshal completed inspection paperwork after the inspections and has other responsibilities including responding to citizen complaints and spills, conducting follow up inspections, and carrying out enforcement actions.

III.D.3. City-owned Industrial Facilities

The city-owned industrial facilities are located on 19 municipal yards which are inspected quarterly by city staff. On June 16, 2010, the EPA inspection team visited three of the industrial facilities: the City Garage, the Butts Station salt storage and stockpile area, and the City Traffic Operations Facility. The three facilities drain to the city MS4.

Site: City Garage

The City Garage is responsible for maintenance of city vehicles including police cars, construction equipment, dump trucks, etc. In addition to the indoor garage, the site includes paved and unpaved parking areas for storing vehicles. The EPA inspection team made the following observations during the site visit:

- Oil stains and oil spill drying material were observed around the site (Photographs 41 through 43). The City Environmental Quality Manager stated that oil spill drying material is typically cleaned up within a day.
- Staining underneath piping near the coolant tank (Photograph 44) was observed. The City Environmental Quality Manager indicated that leaks in this location were a recurring issue and are monitored regularly by city staff.
- Sediment was accumulating along a curb and in front of a storm sewer inlet (Photograph 45). The City Environmental Quality Manager noted this issue in her inspection report and stated repairs would be required (Exhibit 4, City Garage Inspection Report[2]).

Site: Butts Station – Streets and Highways

The Streets and Highways section of Butts Station stores salt, sand, and gravel and maintains a brine tank. While only a few of the stockpiles were covered, the city had taken measures to prevent stockpile materials from entering the storm sewer inlets and surface water during storm events. Storm sewer inlets were barricaded by cinder blocks lined with silt fence and wire mesh fence. Gravel was placed along the outside of the silt fence to hold the cinder block structure in place (Photograph 46). Additionally, the city placed silt fence between the stockpile area and the nearby surface water. The EPA inspection team made the following observations during the site visit:

- Oil staining was observed in the truck parking area (Photograph 47).
- Storm sewer inlets in the parking area were not protected.
- No bollards or secondary containment were located around the brine tank and its pump, which were located next to the facility's driveway and parking area (Photographs 48 and 49). Additionally, the tank control valve was in the "On" position.

Site: City Traffic Operations Facility

The City Traffic Operations Facility uses and stores paint on site. The facility drains to a drainage ditch (Photograph 50). The EPA inspection team made the following observations during the site visit:

- Uncovered dumpsters containing trash and debris were located outside (Photograph 51).
- Trash and debris, including torn sand bags, were observed (Photographs 52 through 55).
- Dirty paint trays and paint drum lids were observed throughout the site (Photographs 55 and 56).
- Paint spills were located around the facility grounds (Photographs 57 and 58). In one area, paint had spilled over a bermed containment area and onto the surrounding grass (Photograph 59).
- An unpermitted, unauthorized vehicle washing area was located on site (Photographs 60 and 61). The City Environmental Quality Manager stated that she was unaware the washing area existed and that the facility should be using the dedicated wash rack at the City Garage.

[2] The inspection report provided by the city of Chesapeake is incorrectly dated June 15, 2010. The inspection actually occurred on June 16, 2010.

Observation 5. The city of Chesapeake is not prohibiting non-stormwater discharges from the MS4 originating from the city's municipal facilities.

During a site visit to the city's municipal yard, the EPA inspection team observed numerous stormwater issues. At the City Garage, the EPA inspection team noted oil staining, oil spill drying material that had not been cleaned up, and staining near the coolant tank. These issues were not included in the City Environmental Quality Manager's report. Also, at Butts Station, no bollards or secondary containment were present around a brine tank and pump to prevent truck accidents and spills. Additionally, while the pump was not operating, the control valve on the tank had not been turned off. The City Environmental Quality Manager resolved this issue while on site. Near the truck parking area, the EPA inspection team noted oil stains which the City Environmental Quality Manager did not note on her inspection report (Exhibit 5, Butts Station Inspection Report[2]).

The EPA inspection team also visited the Traffic Operations facility. The EPA inspection team observed uncovered dumpsters containing trash and debris located outside, torn sand bags, paint tracked around the facility, dirty paint trays and paint drum lids, and paint that had spilled over a bermed area onto grass. None of these issues were included in the City Environmental Quality Manager's inspection report (Exhibit 6, Traffic Operations Inspection Report[2]). The EPA inspection team also observed an unpermitted vehicle washing area draining to the MS4. The City Environmental Quality Manager did not note the washing area until prompted by the EPA inspection team.

III.E. Requirement I.A.1.d – Runoff from Construction Sites

Part I.A.1.d of the Permit addresses requirements for the structural and source controls program for construction sites. Within this program area, the inspection was focused on the city's routine inspections and site operator training. The city's Erosion and Sediment Control Program (E&S Program) is implemented by the Department of Development and Permits (E&S associated with subdivisions and commercial development) and the Stormwater Management Division (E&S associated with residential and commercial building construction). The Departments of Development and Permits and Stormwater Management utilize the city's "Standard Operating Procedure (SOP) for Erosion & Sediment Control Minimum Standards Inspection" document to guide inspection activities (Exhibit 7, E&S Inspection SOP). A review of the guide indicates that it is slightly outdated and is in need of revision (refer to Observation 9 for further discussion). The EPA inspection team's observations related to this section of the permit are discussed below.

III.E.1. Routine Construction Site Inspections

In-fill and Recorded Lots

The city's Stormwater Management Division acts as the principal E&S coordinating entity for the city. The division has three dedicated inspectors, a manager, and three other staff members that conduct inspections when necessary (Engineering Technicians). Stormwater Management E&S Inspectors are responsible for routine E&S inspections of in-fill lots and the recorded lots within subdivisions where the utility improvements have been activated for water and sewer connections to individual lots. According to city representatives, Stormwater Management E&S Inspectors field verify referrals by other departments/divisions and issue notices to comply and issue stop work orders (SWOs) if necessary. City representatives stated that the review of E&S controls is the primary duty of the three dedicated inspectors. City representatives explained that at the time of the audit, the city was issuing approximately 30 building permits per month with an average of approximately 100 active permits at any one time. Four of the Stormwater Management staff are Conservators of the Peace and are therefore authorized to issue SWOs and carry badges.

A city representative stated that once a building permit is issued for a lot, an inspector would conduct an E&S inspection at a minimum of every two weeks and within 48 hours of a runoff-producing storm event of 0.5 inches, unless an E&S issue was reported. A Stormwater Management E&S Inspector stated that E&S inspections are documented one of two ways. If no E&S issues are noted at the lot, the inspection is documented in a "Stormwater Technical Services Daily Activity Log." If E&S issues are noted, the inspector verbally communicates the issues to on site representatives and completes an Erosion and Sediment Control Minimum Standard (MS-19) form (Exhibit 8, MS-19 Form) and sends the completed form to the responsible party with a corrective action deadline (usually two days).

Subdivisions

The city's Department of Development and Permits has nine (9) inspectors responsible for inspections of land disturbing activities at residential and commercial subdivision sites during infrastructure installation. City representatives explained that the Department of Development and Permits Inspectors' primary duty was the review of infrastructure installation (i.e., utilities, pump stations, etc.). The review of E&S controls are not the primary responsibility of these inspectors.

The city requires developers to attend a preconstruction meeting with representatives from the Department of Development and Permits at the site prior to major land disturbance. A city representative stated that the city had approximately 25-30 active subdivisions and commercial construction sites at the time of this EPA inspection and that the inspectors from this division were divided geographically. Each of the nine inspectors may be responsible for as many as five sites at various stages of construction at any one time. The inspectors attempt to visit each of their sites every workday; however, a comprehensive review of the site (i.e., perimeter review or all active areas of construction) for the 19 minimum standards was not always a part of the attempted daily site visit. The inspectors explained that they attempted to conduct a comprehensive E&S inspection at a minimum of every two weeks and within 48 hours of a runoff-producing storm event of 0.5 inches, unless an E&S issue was identified during review of infrastructure construction. It is noted that five years prior to the EPA inspection the city had approximately 15 to 16 inspectors for approximately 75-90 sites.

Public Linear Projects

The city's Department of Public Works inspects linear capital improvement projects. Section 6.7.1 of the MS4 Program Plan, discusses the requirements for inspections and enforcement. The EPA inspection team briefly discussed this topic during the inspection; however, no field site visits or documentation review were conducted to verify the verbal explanation of the program.

III.E.2. Active Construction Site Visits

On June 17, 2010, the EPA inspection team conducted one site visit to an active construction site; details of the site visit are provided below. All referenced photographs are contained in Attachment 4, Photograph Log.

Site: Culpepper Landing (Southern End of Mill Creek Parkway, Chesapeake, VA)

Culpepper Landing (Photograph 62) is a 485 acre community adjacent to the Great Dismal Swamp National Wildlife Preserve (to the south) and the Great Dismal Swamp Canal (to the East). The planned community is expected to consist of single and multi family homes, a 160-acre conservation area, walking trails, a marina, an amphitheatre, commercial space, numerous parks or open space areas, and has a designated area for the future construction of an elementary school. Exhibit 9 contains a site plan layout for the community. At the time of the EPA inspection team site visit, single family homes had been constructed in the north eastern portion of the site, single family homes were under construction in the northern section of the site (just west of the entrance road) (Residential Area) and clearing and grading

was occurring in the southeastern portion of the site (Subdivision Area). Five wet stormwater ponds and two- several hundred foot long, tidally influenced, "outfalls" had been constructed. The community features seven homebuilders.

Residential Area

Two wet ponds are located in the northern portion of the site on either side (east and west) of the entrance road to the community (Mill Creek Parkway). The ponds appeared to be fully stabilized and complete. The two ponds are interconnected and the eastern most pond discharges to the Great Dismal Swamp Canal through a constructed outfall located in the northeastern portion of the development. The exact discharge location was not able to be viewed due to overgrown vegetation. Photographs 77 and 78 indicate the effluent quality near the discharge point from the outfall. The ponds on the east side of the entrance road appeared to be receiving stormwater from a mostly stabilized area occupied by townhouses and the pond to the west of the entrance road was receiving stormwater from an area with active construction of residential detached homes.

The following items were noted during the EPA inspection team visit to the Residential Area with the Stormwater Management E&S Inspectors:

- Lots that did not appear to be under active construction were not stabilized (Photographs 63 and 64).
- E&S controls were not installed prior to the start of home building activities (Photographs 65 and 66).
- Construction best management practices (BMPs) to prevent sediment from entering several storm drain inlets along the roadway were not implemented (Photographs 67 through 70).
- Sediment had been tracked into the roadway (Photograph 71).
- A sanitary toilet was not secured to prevent it from tipping and releasing the contents of the toilet (Photograph 72).
- A trench was dug on a residential lot to drain water from the structure to the street (Photograph 73).
- Sediment had accumulated in a roadway near the stormwater pond (Photographs 74 through 76).

It was noted that the Stormwater Management E&S Inspectors interviewed were not aware of the drainage patterns of the storm sewer surrounding the residential lots in the Culpepper Landing subdivision, including the discharge location of the unprotected roadway storm drains. The Stormwater Management E&S Inspectors stated that the inspection of roadways was not their responsibility and that they had no authority in the roadways; however, it is important for the inspectors to understand what the drainage patterns are, what SWM facilities exist downstream, and the ultimate receiving surface water in order to adequately protect stormwater and receiving water quality. It appeared that the roadway storm drains discharged to the stormwater pond in the front of the community; however, no documentation or information was provided to verify the storm drain discharge locations into the pond and no storm drain outlets were identified on the banks of the pond in the immediate area.

Subdivision Area

Three additional wet ponds are connected in series to an outfall structure that discharges water to the Great Dismal Swamp. The first pond in the series is located approximately in the center of the development and is connected to the second pond in the series to the southeast and to the third pond farther to the southeast. The third pond is hydraulically connected to a several hundred foot long tidally influenced outfall (Photograph 90) that discharges to the Great Dismal Swamp. Photographs 92 through 94 indicate the effluent quality near the discharge point from the outfall. The ponds were observed to be receiving stormwater from unstabilized areas with two large soil stockpiles.

The following items were noted during the EPA inspection team visit to the Subdivision Area with the Department of Development and Permit Inspectors:

- A large percentage of the Subdivision Area was disturbed (i.e., contained little vegetation) where active construction was not occurring (Photographs 79 through 81).
- The subdivision area contained two large soil stockpiles that had not been stabilized or where stabilization had not been successful (both piles showed evidence of large rills and sedimentation) (Photographs 80 through 82).
- Silt fence surrounding one of the stockpiles was overwhelmed by sedimentation (Photograph 83).
- The second of two large soil stockpiles on site was not stabilized, was covered with rills, and there were no sedimentation controls between the stockpile and stormwater pond (Photograph 81).
- Inlet protection was noted near two inlets receiving runoff from the second stockpile; however, the protection was overwhelmed by a large amount of sediment (Photographs 83 through 87).
- Side slopes of the ponds and outfall were not stabilized resulting in erosion of the side slopes. The inspectors stated that the developer had attempted to stabilize the side slopes of the ponds and outfall with vegetation on at least three occasions, but that the attempts had not been successful as erosion of the side slopes was noted in numerous locations (Photographs 88 through 91).
- Turbid water was noted discharging from outfall structure (Photograph 92).
- An unapproved concrete washout location was noted near the second stockpile (Photograph 95).

Alternative construction BMPs had not been explored or suggested by the inspector to the developer. When questioned, the inspector's knowledge of alternative construction BMP types was limited.

Observation 6. The E&S inspections conducted by the city of Chesapeake are not addressing non-sediment, construction site pollutant sources.

Permit Part I.A.1.d states that the city shall "…continue implementation and maintenance of structural and nonstructural best management practices to *reduce pollutants* in storm water runoff from construction sites [emphasis added]."

The City E&S Site Plan Reviewers and Inspectors (Development and Permits or Stormwater Management) have not been tasked with assessing construction site pollutant sources other than sediment-generating sources. The city has based their E&S Inspection Program on the city's Stormwater Management Ordinance under authority granted by the Virginia Erosion and Sediment Control Law. The Virginia Erosion and Sediment Control Regulations (VESCR) (4VAC50-30) have been promulgated to administer, implement, and enforce the Virginia Erosion and Sediment Control Law (§ 10.1-560 et seq. of the Virginia Code). However, the VESCR pertain only to "erosion and sediment control concerns," and mandate the adoption of erosion and sediment control programs by localities, which dictates the scope of the local program (Exhibit 10, VESCR). Chapter 26, Article 23, Article III (Erosion and Sediment Control) of the Chesapeake Code of Ordinances states that the city is authorized to implement Title 10.1, chapter 5, article 4 of the Code of Virginia, known as the Erosion and Sediment Control Law. Through discussions with the City E&S Site Plan Reviewers and Inspectors, it was determined that site plans and physical site conditions are only reviewed for E&S related information. The city's inspection checklist does not include a non-sediment component (Exhibit 8, MS-19 Form).

During the site visit to the Culpepper Landing construction site, two construction site pollutant sources other than sediment-generating sources were observed. An unsecured sanitary toilet was observed in the Residential Area (Photograph 72) and a concrete washout location that was not identified on the construction site plans was observed near one of the two large stockpiles in the Subdivision Area (Photograph 95).

Chapter 26, Article VIII (Stormwater Management) provides the city with the authority to assess non-sediment, construction site pollutant sources such as: construction chemicals; vehicle and equipment maintenance and fueling; paving and grinding; spill prevention and control; solid waste; concrete waste and wash water; and sanitary/septic waste (e.g., portable toilets).

Observation 7. The city of Chesapeake is not enforcing proper construction erosion and sediment controls at the Culpepper Landing Development Construction Site.

Part I.A.1.d(1) of the permit requires that the city of Chesapeake enforce regulations pertaining to erosion and sediment control. However, the EPA inspection team observed that the City Inspectors (from Development and Permits and Stormwater Management) did not enforce proper construction E&S controls at the Culpepper Landing Development construction site.

During the physical review of the site, the EPA inspection team noted that storm drains in the residential construction area where individual lots were being constructed were not protected; concrete wash water was evident in an area that was not designated for such activity; large stockpiles were not stabilized or contained; a large portion of the site was not temporarily stabilized; and erosion was observed throughout the site. Several of these issues were identified in an April 6, 2010 routine E&S inspection of the site by the Department of Development and Permits, but had not been corrected as of the date of this inspection (over 10 weeks later).

It is also noted that there are areas that can get overlooked during inspections, due to a gap in responsibilities between the two E&S inspection departments. During a review of the home builder sites at Culpepper Landing, the EPA inspection team noted that roadway inlet controls were not in place and that lots without active building permits were not adequately stabilized. A Stormwater Management E&S Inspector stated that the responsibility of the roadways and lots without active building permits in the subdivision fell under the Department of Development and Permits, since Stormwater Management had no authority over areas without active building permits. The Department of Development and Permits Inspector stated that once a number of active building permits are issued, he no longer actively inspects that area of the subdivision. The Department of Development and Permits Inspector did not provide further clarification regarding the number of active building permits or percentage of lots that would trigger ceasing inspections of a portion of the subdivision.

Observation 8. The city of Chesapeake does not have a training program to educate construction site operators.

Permit Part I.A.1.d(2) requires that "the permittee shall continue implementation of the education and training program for construction site operators." Furthermore, the city's MS4 Program Plan, Section 3.3 (E&S Control Education and Outreach) states that the city participates in HR STORM, a regional stormwater education initiative coordinated by the Hampton Roads Planning District Commission (HRPDC).

The city did not develop a training program to educate construction site operators, did not publicize training conducted by outside organizations or agencies including HR STORM, and did not publicize the state's certification programs to site operators.

Observation 9. The city of Chesapeake's SOP "Erosion and Sediment Control Minimum Standards, Inspection and Enforcement" is not reflective of current operating procedures.

The city's SOP "Erosion and Sediment Control Minimum Standards, Inspection and Enforcement" is out of date and has not been revised to reflect current operations. The SOP was issued by the Public Works

Department in 2004 for construction site stormwater inspections and does not reflect actual operating procedures or the correct department names, due to city reorganization since issuance of the SOP.

The SOP and Erosion & Sediment Control Minimum Standard MS-19 form (an attachment to the SOP) (Exhibit 7, E&S Inspection SOP), states that the "Subdivisions" Department is responsible for conducting routine E&S inspection of subdivisions; however, the Department of Development and Permits is now responsible for the routine inspections of subdivisions.

SOP section "*Duties, Subdivisions"* (Item A.5, Page 5), states that if an E&S violation is noted during an inspection and identified on Part II of the MS-19 form, it shall not take more than 48 hours for an individual lot, or 72 hours for a subdivision, to return to compliance upon notification of noncompliance. The SOP further states that if the permittee had not corrected the issue of noncompliance within the specified timeframe the inspector would prepare a "Stop Work Order Placard and a Stop Work Order Letter" for issuance. City Inspectors stated that Stop Work Orders are rarely used and that verbal communication and cooperation with the permittees are more commonly used methods to achieve compliance, unless there is a significant issue of noncompliance. In Fiscal Year 2009-2010, the city documented 41 instances of noncompliance, but did not issue any Stop Work Orders. Further, a review of the Department of Development and Permit's documentation for the Culpepper Landing subdivision indicated issues of noncompliance that were originally identified during an inspection conducted on April 6, 2010 which had not been resolved as of the date of the EPA inspection. City Inspectors stated that they were continuing to work with the permittee and had not issued a Stop Work Order because of the "minor" nature of the issues.

It should be noted that the SOP and MS-19 forms do not require or specify the scope of the inspection (i.e., whether the entire site must be inspected, including a review of the perimeter and outfall(s)). The Department of Development and Permits Inspector stated that a complete review of the site is not conducted during every routine inspection of subdivisions.

Observation 10. The inspectors of the city of Chesapeake are not completing the documentation required by the city's SOP "Erosion and Sediment Control Minimum Standards, Inspection and Enforcement".

The City Inspectors were not completing the documentation required by the city's SOP "Erosion and Sediment Control Minimum Standards, Inspection and Enforcement". SOP sections "*Duties, Stormwater Management"* (Item A.6, Page 2) and "*Duties, Subdivisions"* (Item A.4, Page 5) state that Part I of the MS-19 Form must be completed during routine inspections, at least once every two (2) weeks and within 48 hours of runoff producing storm events. The inspectors in both departments stated that they do not complete Part I of the required MS-19 form during every routine bi-weekly and post-rain event inspection.

The Department of Development and Permits is responsible for routine E&S inspections of subdivisions including the recorded lots, until the utility improvements have been satisfactorily inspected for activation. Stormwater Management is responsible for routine E&S inspections of individual building lots within the subdivisions where the utility improvements have been activated for water and sewer connections to individual lots.

The Department of Development and Permits Inspectors stated that an original inspection report is completed only if noncompliance is noted. If noncompliance is not identified, notes are entered into a hand written log and Part I of the MS-19 form is not completed. As a result, there is no documentation that the inspector completed a review of the 19 minimum standards. The inspectors further indicated that if noncompliance is not corrected a new form is not generated, including Part I, and that the same inspection report is sent (typically via fax) to the Responsible Land Owner on a biweekly basis until

deficiencies are fixed. It should be noted that E&S is not these inspectors' primary purpose on site. The Department of Development and Permits Inspector is primarily responsible for inspecting subdivisions for drainage, roadways, and utilities or "Pump station to finished floor."

During a site visit, the EPA inspection team reviewed an MS-19 form that documented E&S issues at Culpepper Landing that were identified during a routine inspection conducted on April 6, 2010. The inspector indicated that the form was sent to the developer of the subdivision on the same day as the inspection. The inspector further indicated that because all of the issues had not been corrected in a timely manner the same report was sent via facsimile to the responsible authority again on June 2, 2010 and June 16, 2010. The EPA inspection team requested a copy of the Department of Development and Permits hand written log for the period of January 2010 through June 2010, and all MS-19 forms completed for that same time frame for the Culpepper Landing Subdivision. The city did not provide the requested information to the EPA inspection team.

Similar to the procedures of the Department of Development and Permits Inspectors, the Stormwater Management E&S Inspectors indicated that if noncompliance is not identified during routine inspections, an entry is made into their "Stormwater Technical Services Daily Activity Log" and that Part I of the MS-19 form is not completed. As a result, there is no documentation that the inspector completed a review of all minimum standards. The Stormwater Management E&S Inspector stated that the inspection form is only completed if noncompliance is noted, in which case Parts I and II of the form are completed along with photo documentation.

The EPA inspection team requested a copy of the "Stormwater Technical Services Daily Activity Log" log for the period of January 2010 through June 2010 (Exhibit 11, E&S Daily Activity Logs) and MS-19 (Exhibit 12, Culpepper Landing Inspection Sheets) forms completed for that same time frame for Culpepper Landing. The city provided the requested information to the EPA inspection team several months after the inspection. Upon review of the documentation, it was noted that an MS-19 form was not completed for all of the inspections documented on the "Stormwater Technical Services Daily Activity Log," verifying the statements made by Stormwater Management E&S Inspectors.

The table below provides examples of inspections conducted by Stormwater Management at Culpepper Landing that were documented on Stormwater Management's "Stormwater Technical Services Daily Activity Log" in which corresponding MS-19 forms were not provided to the EPA inspection team.

The inspection dates listed in the table below indicate that an inspection had occurred based upon the "Stormwater Technical Services Daily Activity Log". The date of the inspection is denoted in bold if the required MS-19 form was completed for an inspection on that date. Each of the eleven lots listed in the table is missing the required documentation as required by the city's SOP.

Table 1. Stormwater Management Inspections at Culpepper Landing

Lot No.	Address	BLDG Permit No.	Inspection Date 1 (Log)	Inspection Date 2 (Log)	Inspection Date 3 (Log)	Inspection Date 4 (Log)
4	3204 Conservancy	B1002203	**6/9/2010**	5/27/2010	5/11/2010	**5/7/2010**
5	3208 Conservancy	B1001426	6/18/2010	**6/16/2010**	**6/9/2010**	5/27/2010
6	3212 Conservancy	B1001537	6/18/2010	**6/16/2010**	**6/9/2010**	**5/27/2010**
9	503 Robert Frost	B0906176	4/2/2010	**3/18/2010**	3/9/2010	**2/24/2010**
27	3252 Conservancy	B1002427	**6/9/2010**	5/27/2010	5/11/2010	**5/7/2010**
28	3256 Conservancy	B1002945	6/28/2010	6/18/2010	**6/16/2010**	**6/9/2010**
29	3260 Conservancy	B1000419	4/13/2010	**4/2/2010**	**3/18/2010**	3/9/2010
31	3268 Conservancy	B1000420	5/11/2010	**5/7/2010**	**4/22/2010**	4/13/2010
48	3209 Dodd	B1000243	4/13/2010	4/2/2010	**3/18/2010**	3/9/2010
60	3245 Conservancy	B0906678	4/13/2010	4/2/2010	**3/18/2010**	3/9/2010
98	3108 Mercantile	B1000291	4/13/2010	**4/2/2010**	**3/18/2010**	3/9/2010